

IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1-40. (cancelled)

41. (currently amended) A process for producing a casting mold for metallic foundry or for precision casting of fine metal parts, wherein the casting mold, or at least a part thereof, is produced by a generative rapid prototyping process, said process comprising:

a) forming a layer of a mixture of ceramic coarse particles and sinterable ceramic fine particles, wherein the average particle diameter of the coarse particles is above 10 μm , the average particle diameter of the ceramic fine particles is below 5 μm , and the average particle diameter of the ceramic coarse particles is at least ~~the~~ 10 fold of the average particle diameter of the ceramic fine particles,

b) melting or sintering the ceramic fine particles under the influence of intensive radiation without substantially melting the ceramic coarse particles such that the fine particles form bridges binding the coarse particles, and

c) repeating steps a) and b) to form successive layers until a casting mold, or at least a part thereof, comprised of a porous ceramic in the sintered state is formed,

wherein the thermal coefficient of expansion of the thus produced ceramic casting mold or part is above approximately $8.5 \cdot 10^{-6} \text{K}^{-1}$.

42. (currently amended) The process ~~A casting mold~~ as in Claim 41, wherein said intensive radiation is laser radiation.

43. (currently amended) The process ~~A casting mold~~ as in Claim 41, wherein the fine particles and coarse particles are the same material.

44. (currently amended) The process ~~A casting mold~~ as in Claim 41, wherein the coarse particles are oxide ceramics based on Al, Zr, and/or Mg, while the fine ceramic particles are based on SiO₂ and/or silicates.
45. (currently amended) The process ~~A casting mold~~ as in Claim 41, wherein said coarse particles are coated with an organic binder, and wherein fine particles are incorporated in said organic binder.
46. (currently amended) The process ~~A casting mold~~ as in Claim 45, wherein the proportion of binder phase to ceramic phase is 7% or less. ~~{0018}~~
47. (currently amended) The process ~~A casting mold~~ as in Claim 41, wherein the sintering temperature of the fine particles is at least 50°C below that of the coarse particles.
48. (currently amended) The process ~~A casting mold~~ according to Claim 41 ~~[[21]]~~, wherein the casting mold includes reinforcing ribs produced using a generative rapid prototyping process.
49. (currently amended) The process ~~A casting mold~~ according to Claim 41 ~~[[21]]~~, wherein, at least during casting, the casting mold is back-fed with a fill of ceramic material.
50. (currently amended) A process for producing a casting mold ~~A casting mold~~ for metallic foundry or for precision casting of fine metal parts,
wherein the casting mold, or at least a part thereof, is produced by a 3D binder printing process comprising
- a) forming a layer of a mixture of ceramic coarse particles coated with a binder and ceramic fine particles,
 - b) dissolving or melting the binder in areas corresponding to the casting mold, or part thereof, so as to cause said coated particles in said areas to adhere,

c) repeating steps a) and b) to form successive layers until a green casting mold, or part thereof, is formed,

d) sintering said green casting mold, or part thereof, to sinter the fine particles without substantially melting the coarse particles such that the fine particles form bridges between the coarse particles, such that said mold or part thereof is comprised of a porous ceramic in the sintered state, and wherein the thermal coefficient of expansion of the ceramic mold is above approximately $8.5 \times 10^{-6} \text{K}^{-1}$.

51. (currently amended) The process ~~casting mold~~ according to Claim 50, wherein the green casting mold includes 0.5 to 10 wt.% organic binder.
52. (currently amended) The process ~~casting mold~~ according to Claim 50, wherein the proportion of binder phase to ceramic phase is 7% or less.
53. (currently amended) The process ~~casting mold~~ according to Claim 50, wherein the average particle diameter of the coarse particles is above 10 μm , the average particle diameter of the fine particles is below 5 μm , and the average particle diameter of the coarse particles is at least ~~the~~ 10 fold of the average particle diameter of the fine particles.
54. (currently amended) The process ~~casting mold~~ according to Claim 50, wherein said fine particles are incorporated in the binder coating the coarse particles.
55. (currently amended) The process ~~casting mold~~ according to Claim 50, wherein the fine particles and coarse particles are the same material.
56. (currently amended) The process ~~casting mold~~ according to Claim 50, wherein the sintering temperature of the fine particles is at least 50°C below that of the coarse particles.

57. (currently amended) The ~~process casting-mold~~ according to Claim 50, wherein the ceramic mold includes as a main component aluminum oxide, zirconium oxide, magnesium silicate, spinel and/or magnesium oxide.
58. (currently amended) The process according to Claim 50 [[30]], wherein the binder coating the coarse particles is an organic polymer.
59. (currently amended) The ~~process powder-mixture~~ according to Claim 58, wherein the organic polymer is readily soluble in organic solvent.
60. (currently amended) The ~~process powder-mixture~~ according to Claim 56 [[36]], wherein the ceramic coarse particles include oxides of the elements Mg, Al₂ and/or Zr, and the ceramic fine particles are comprised essentially of SiO₂[[.]] and/or silicates.